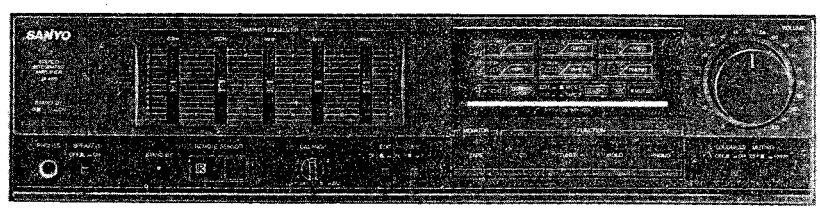
SANYO

Service Manual

Stereo Integrated Amplifier

JA489 (EUROPE) (SPAIN) (WEST GERMANY)



Specifications

Note:
The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

Continuous output power	55 W x 2 (at 8 ohms, 1 kHz, 0.9% distortion)
Input sensitivity and impedance	PHONO: 2.5 mV/47 kohms VIDEO/CD/TAPE 1 PLAY /TAPE 2 PLAY/TUNER: 150 mV/47 kohms
Output level	TAPE 1 REC/TAPE 2 REC: 150 mV
Frequency response	40 Hz – 35 kHz (CD)
Graphic equalizer	± 10 dB (63/250/ 1 k/4k/16k Hz)
Loudness control response	+ 8 dB/+ 4 dB (100 Hz/10 kHz)
Signal to noise ratio	86 dB (CD)
Power requirements	AC: 220 V, 50 Hz
AC outlet (switched)	100 W max.
Dimensions (W x D x H)	Approx. 420 x 290 x 105 mm

RB 670 REMOTE CONTROLLER

Power requirements	DC: 3 V, "AA/SUM-3/ R6" battery x 2
Dimensions (W x D x H)	Approx. 160 x 50 x 18 mm

Specifications subject to change without notice.

PRODUCT CODE No.
129 312 00 (Eulope)
129 312 01 (W. Germany)
129 312 02 (Spain)

REFERENCE No. WM-580200

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION : Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 207 7085	INNER CARTON (W.GERMANY)
	614 207 7108	INNER CARTON (SPAIN)
	614 207 7092	INNER CARTON (EUROPE)
	614 206 3576	PAD, LEFT
	614 206 3583	PAD, RIGHT
	614 176 8625	INNER POLYE LAMINA COVER, SET
	614 176 2685	INNER POLYE COVER, ACCESSORY
	614 207 7139	INSTRUCTION MANUAL (W.GERMANY)
	614 207 7153	INSTRUCTION MANUAL (SPAIN)
	614 207 7146	INSTRUCTION MANUAL (EUROPE)
	614 186 2682	NOTICE (W.GERMANY)
	614 202 9527	SOCKET, 4P 1000MM, FOR CD

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 207 7207	FRONT PANEL ASSY
2	614 208 0818	CABINET ASSY
3	614 207 7238	BOTTOM LID ASSY
4	614 207 7320	BACK PANEL (W.GERMANY)
	614 207 7344	BACK PANEL (SPAIN)
	614 207 7337	BACK PANEL (EUROPE)
5	614 206 2845	KNOB, ROTARY, VOLUME
6	614 206 3910	ROTARY KNOB, BALANCE
7	614 194 4517	PUSH BUTTON, STAND-BY
8	614 100 6161	PUSH BUTTON, SPEAKER
9	614 194 9086	PUSH BUTTON, EDIT·TAPE·LOUDNESS·MUTING
10	614 206 2852	BUTTON, FUNCTION·MONITOR
11	614 206 3927	SLIDE KNOB, GRAHIC EQUALIZER
12	614 116 1198	REINFORCEMENT, MAIN P.T
13	614 114 5211	BRACKET, HEAT SINK, RIGHT
14	614 114 5273	BRACKET, HEAT SINK, LEFT
15	614 114 8403	BRACKET, IC FIXING
16	614 107 4061	BRACKET, PCB FIXING
17	⚠ 614 129 1901	FIXER, AC CORD
18	614 129 4667	FIXER, PCB FIXING
19	614 129 2922	FIXER, LEAD RETAINER
20	614 129 9181	LUG, LEAD RETAINER
21	614 129 4971	FIXER, LEAD RETAINER

FIXING PARTS

Ref. No.	Part No.	Description
Y1	412 004 3107	SPECIAL SCREW
Y2	412 003 2804	SPECIAL SCREW
Y3	411 001 1901	SCR S-TPG BIN 3X6
Y4	411 021 6405	SCR S-TPG BIN 3X8
Y5	411 021 6603	SCR S-TPG BIN 3X8
Y6	411 021 3503	SCR S-TPG BIN 3X10
Y7	411 001 4209	SCR S-TPG BIN 4X8
Y8	411 020 9803	SCR S-TPG BRZ + FLG 3X6
Y9	411 020 9902	SCR S-TPG BRZ + FLG 3X8
Y10	411 022 4608	SCR S-TPG FLT 3X8
Y11	411 105 9704	WASHER Z 3X10X1
Y12	411 008 0402	WASHER OUT TW 3

ELECTRICAL PARTS

Ref. No.	Part No.	Description
51	⚠ 614 023 3100	POWER CORD
or	⚠ 614 203 0493	POWER CORD
52	⚠ 614 035 4645	SOCKET, OUT LET
53	⚠ 423 005 3508	FUSE 250V 1.6A, F901
54	⚠ 614 208 3291	PCB, P.T PRIMARY
55	⚠ 614 207 9607	POWER TRANSFORMER, MAIN
56	614 194 5422	HEAT SINK, FOR IC900
57	⚠ 423 006 7208	FUSE 250V 3.15A, F701·801
58	614 051 9785	LUG, EARTH
59	614 051 9785	LUG, EARTH, FTZ (W.GERMANY)

PRE-AMPLIFIER P.C.BOARD ASSY

Ref. No.	Part No.	Description
71	614 208 2652	ASSY, PCB, PRE-AMP (W.GERMANY)
	614 208 2638	ASSY, PCB, PRE-AMP. (SPAIN)
	614 207 1304	ASSY, PCB, PRE-AMP. (EUROPE)
	614 020 1659	SOCKET, 4P, RCA-PIN, EARTH, PHONO·VIDEO (EUROPE·W.GERMANY)
	614 020 1642	SOCKET, 4P, RCA-PIN, NO-EARTH, CD·TUNER (EUROPE·W.GERMANY)
	614 020 1703	SOCKET, 6P, RCA-PIN, PHONO·VIDEO·CD (SPAIN)
	614 017 2539	PLUG, 2P, IR
	614 017 4250	PLUG, 2P, MOTOR
	614 017 4250	PLUG, 2P, IR
	614 017 4267	PLUG, 3P, VOLUME
	614 017 2553	PLUG, 4P, LOUDNESS·MUTING SW.
	614 017 2621	PLUG, 11P, FUNCTION SW.
	614 020 8856	SOCKET, 4P, SUB-P.T
	614 206 0223	SOCKET, 5P, MAIN-AMP.
	614 035 4966	SOCKET, 7P, MAIN-AMP.
	614 035 4973	SOCKET, 8P, MAIN-AMP.
	614 206 0254	SOCKET, 8P, MAIN-AMP.
X450	614 035 1460	SERAMIC RESONATOR, 800KHZ
IC420	409 114 4803	IC LB1641
IC450	409 178 8809	IC LC6527C-4035
IC460	409 020 9107	IC LC4069UB
IC461	409 020 6908	IC LC4011B
IC500	409 018 4503	IC LA6458DS
IC510	409 022 3608	IC LC7818
Q410	405 003 5302	TR 2SA1317-T
or	405 003 5401	TR 2SA1317-U
Q411	405 003 5302	TR 2SA1317-T
or	405 003 5401	TR 2SA1317-U
Q412	405 003 5302	TR 2SA1317-T
or	405 003 5401	TR 2SA1317-U
Q421	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q422	405 017 9600	TR 2SC3330-T

Ref. No.	Part No.	Description
Q422	405 017 9709	TR 2SC3330-U
Q430	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q440	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q441	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q460	405 003 5302	TR 2SA1317-T
or	405 003 5401	TR 2SA1317-U
Q461	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q490	405 018 0101	TR 2SC3331-T
or	405 018 0200	TR 2SC3331-U
Q495	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q496	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
D400	407 053 7107	ZENER DIODE MTZ6.2B
D401	407 007 9904	DIODE GMA01
D403	407 007 9904	DIODE GMA01
D404	407 007 9904	DIODE GMA01
D410	407 007 9904	DIODE GMA01
D411	407 007 9904	DIODE GMA01
D412	407 007 9904	DIODE GMA01
D413	407 007 9904	DIODE GMA01
D414	407 007 9904	DIODE GMA01
D415	407 005 4505	DIODE DS442X
D416	407 005 4505	DIODE DS442X
D417	407 007 9904	DIODE GMA01
D418	407 007 9904	DIODE GMA01
D419	407 007 9904	DIODE GMA01
D420	407 007 9904	DIODE GMA01
D421	407 007 9904	DIODE GMA01
D423	407 053 5905	ZENER DIODE MTZ4.7C
D424	407 007 9904	DIODE GMA01
D426	407 007 9904	DIODE GMA01
D427	407 007 9904	DIODE GMA01
D450	407 005 4505	DIODE DS442X
D454	407 007 9904	DIODE GMA01
D460	407 007 9904	DIODE GMA01
D461	407 007 9904	DIODE GMA01
D462	407 007 9904	DIODE GMA01
D463	407 007 9904	DIODE GMA01
D464	407 007 9904	DIODE GMA01
D465	407 007 9904	DIODE GMA01
D466	407 007 9904	DIODE GMA01
D481	407 007 9904	DIODE GMA01
D482	407 007 9904	DIODE GMA01
D489	407 007 9904	DIODE GMA01
D491	407 053 6704	ZENER DIODE MTZ5.6B
D495	407 007 9904	DIODE GMA01
D496	407 005 4505	DIODE DS442X
C460	403 086 2607	NP-ELECT 1U M 50V
C461	403 086 2607	NP-ELECT 1U M 50V
C490	403 085 5203	NP-ELECT 22U M 16V

GRAPHIC EQUALIZER P.C.BOARD ASSY

Ref. No.	Part No.	Description
72	614 208 2676	ASSY, PCB, G.EQUALIZER (W.GERMANY)
	614 207 1311	ASSY, PCB, G.EQUALIZER (EUROPE·SPAIN)
	614 195 6718	VARIABLE RESISTOR, BALANCE
	614 195 6725	VARIABLE RESISTOR, G.EQUALIZER (5 USED)
	614 035 4966	SOCKET, 7P, MAIN-AMP.
	614 036 3265	SOCKET, 7P WITH LEAD, MAIN-AMP.
IC550	409 018 4909	IC LA6458S
Q540	405 017 9600	TR 2SC3330-T
Q541	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q542	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q543	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q544	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q640	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q641	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q642	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q643	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q644	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
C541	403 067 5603	MT-COMPO 0.1U J 50V
C544	403 067 5900	MT-COMPO 0.12U J 50V
C641	403 067 5603	MT-COMPO 0.1U J 50V
C644	403 067 5900	MT-COMPO 0.12U J 50V

FUNCTION SWITCH & LED P.C.BOARD ASSY

Ref. No.	Part No.	Description
73	614 207 1328	ASSY, PCB, FUNCTION SW.
	614 018 9056	SWITCH, PHONO·VIDEO·TUNER·CD·TAPE (5 USED)
	614 035 4942	SOCKET, 5P, EDIT·TAPE SW.
	614 212 3140	SOCKET, 11P, PRE-AMP.
D435	407 039 5905	LED SLP-738F-51-B, TUNER, GREEN
D436	407 039 5905	LED SLP-738F-51-B, CD, GREEN
D437	407 039 5905	LED SLP-738F-51-B, VIDEO, GREEN
D438	407 039 5905	LED SLP-738F-51-B, PHONO, GREEN
D439	407 036 9203	LED SLP-138C-51-B, MUTING, RED
D440	407 036 9203	LED SLP-138C-51-B, EDIT, RED
D441	407 036 9203	LED SLP-138C-51-B, TAPE 1, RED
D442	407 036 9203	LED SLP-138C-51-B, TAPE 2, RED

EDIT·TAPE SWITCH P.C.BOARD ASSY

Ref. No.	Part No.	Description
74	614 207 1335	ASSY, PCB, EDIT·TAPE SW.
	614 207 9638	SWITCH, PUSH, EDIT·TAPE
	614 035 4942	SOCKET, 5P, FUNCTION SW.
	614 035 4966	SOCKET, 7P, TAPE IN/OUT·MAIN-AMP.
	614 212 3157	SOCKET, 7P, MAIN-AMP.

VOLUME P.C.BOARD ASSY

Ref. No.	Part No.	Description
75	614 207 1342	ASSY, PCB, VOLUME
	614 207 9621	VR, ROTARY, VOLUME
	614 020 1222	SOCKET, 3P, MAIN·PRE-AMP.
	614 035 9350	SOCKET, 3P WITH LEAD, MAIN-AMP.
	614 035 9572	SOCKET, 3P WITH LEAD, PRE-AMP.
	614 020 1253	SOCKET, 6P, LOUDNESS·MUTING SW.

TAPE IN/OUT PIN P.C.BOARD ASSY

Ref. No.	Part No.	Description
76	614 208 2751	ASSY, PCB, TAPE IN/OUT (W.GERMANY)
	614 207 1359	ASSY, PCB, TAPE IN/OUT PIN (EUROPE·SPAIN)
	614 020 1642	SOCKET, 4P, RCA-PIN, TAPE 1·2 REC/PLAY
	614 035 4966	SOCKET, 7P, MAIN-AMP.
	614 206 0247	SOCKET, 7P, EDIT·TAPE SW.

LOUDNESS·MUTING SWITCH P.C.BOARD ASSY

Ref. No.	Part No.	Description
77	614 207 1366	ASSY, PCB, LOUDNESS·MUTING SW.
	614 024 3567	SWITCH, LOUDNESS·MUTING
	614 020 1222	SOCKET, 3P, VOLUME
	614 212 3119	SOCKET, 4P, PRE-AMP.
Q480	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
D480	407 007 9904	DIODE GMA01

INFRARED RAYS P.C.BOARD ASSY

Ref. No.	Part No.	Description
78	614 207 1373	ASSY, PCB, IR
	614 024 1419	SPECIAL SWITCH, IR RECEIVE
or	614 024 2829	SPECIAL SWITCH, IR RECEIVE
or	614 208 1198	OPTO CONNECTOR, IR RECEIVE
	614 017 2539	PLUG, 2P, PRE-AMP.
	614 020 1215	SOCKET, 2P, PRE-AMP.
	614 212 3126	SOCKET, 2P, PRE-AMP.
	614 212 3133	SOCKET, 2P, PIN-PIN IR
D443	407 036 9203	LED SLP-138C-51-B, STAND-BY, RED

MOTOR P.C.BOARD ASSY

Ref. No.	Part No.	Description
79	614 207 1380	ASSY, PCB, VOLUME MOTOR
	614 020 6548	SOCKET, 2P, PRE-AMP.
	614 035 9817	SOCKET, 2P WITH LEAD, PRE-AMP.
C421	403 057 3800	POLYESTER 0.1U M 50V

MAIN-AMPLIFIER P.C.BOARD ASSY

Ref. No.	Part No.	Description
80	⚠ 614 208 2850	ASSY, PCB, MAIN-AMP (W.GERMANY)
	⚠ 614 210 2251	ASSY, PCB, MAIN-AMP. (SPAIN)
	⚠ 614 210 2312	ASSY, PCB, MAIN-AMP. (EUROPE)
	614 123 0023	BRACKET FUSE, FOR F701·801
	614 016 8341	PLUG, 2P, TURN TABLE (SPAIN)
	614 016 8235	PLUG, 4P, CD
	614 016 8242	PLUG, 5P, DECK
	614 016 8273	PLUG, 8P, TUNER
	614 020 6548	SOCKET, 2P, P.T SECONDARY
	614 020 1222	SOCKET, 3P, SPEAKER SW.
	614 020 1246	SOCKET, 5P, P.T SECONDARY
	614 035 4942	SOCKET, 5P, PRE-AMP.
	614 020 6586	SOCKET, 6P, REGULATOR
	614 035 4966	SOCKET, 7P, TAPE IN/OUT
	614 206 0247	SOCKET, 7P, EDIT·TAPE SW.
	614 035 4973	SOCKET, 8P, PRE-AMP.
	614 206 0254	SOCKET, 8P, PRE-AMP.
	614 017 4267	PLUG, 3P, VOLUME
	614 017 2584	PLUG, 7P, EDIT·TAPE SW.
	614 017 4304	PLUG, 7P, G.EQUALIZER
	614 002 5590	POZISTOR 100° C
L701	614 034 8958	VHF COIL
L801	614 034 8958	VHF COIL
IC900	⚠ 409 047 1405	IC STK4192MK2
Q701	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q702	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q801	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q802	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
Q901	⚠ 405 035 7008	TR 2SC3851-Y
Q902	⚠ 405 060 1002	TR 2SA1488-Y
Q930	405 003 5708	TR 2SA1318-T
or	405 003 5807	TR 2SA1318-U
Q950	405 018 0101	TR 2SC3331-T
or	405 018 0200	TR 2SC3331-U
D901	⚠ 407 077 7800	DIODE RBV-402LF-A
D906	407 049 6404	ZENER DIODE GZA12Z
D907	407 049 6404	ZENER DIODE GZA12Z
D918	⚠ 407 004 9105	DIODE DSF10C
D919	⚠ 407 004 9105	DIODE DSF10C
D920	⚠ 407 004 9105	DIODE DSF10C
D921	⚠ 407 004 9105	DIODE DSF10C
D950	407 005 4505	DIODE DS442X
D951	407 005 4505	DIODE DS442X
D952	407 005 4505	DIODE DS442X
C730	403 057 3800	POLYESTER 0.1U M 50V
C731	403 057 3800	POLYESTER 0.1U M 50V
C830	403 057 3800	POLYESTER 0.1U M 50V
C831	403 057 3800	POLYESTER 0.1U M 50V
C901	404 001 6809	ELECT 4700U M 50V
C902	404 001 6809	ELECT 4700U M 50V
C905	403 057 3800	POLYESTER 0.1U M 50V
C906	403 053 3705	ELECT 2200U M 35V
C916	403 057 3800	POLYESTER 0.1U M 50V
C917	403 057 3800	POLYESTER 0.1U M 50V
C918	403 057 3800	POLYESTER 0.1U M 50V
C931	403 085 4206	NP-ELECT 10U M 16V
R756	401 009 6404	CARBON 3.3K JB 1/2W
R757	401 006 9002	CARBON 10 JB 1/2W
R758	401 010 5601	CARBON 5.6 JB 1/2W
R856	401 009 6404	CARBON 3.3K JB 1/2W
R857	401 006 9002	CARBON 10 JB 1/2W
R858	401 010 5601	CARBON 5.6 JB 1/2W
R911	⚠ 401 012 4206	CARBON 100 JB 1/4W
R912	⚠ 401 019 2007	CARBON 3.9K JB 1/4W
R920	⚠ 401 069 7700	OXIDE-MT 820 JA 2W
R921	⚠ 401 069 7700	OXIDE-MT 820 JA 2W
R922	401 065 3607	OXIDE-MT 1.2K JA 2W
R923	401 065 3607	OXIDE-MT 1.2K JA 2W
R939	⚠ 402 023 2700	FUSIBLE RES 100 G- 1/4W

SUB-P.T P.C.BOARD ASSY

Ref. No.	Part No.	Description
81	⚠ 614 210 2329	ASSY, PCB, SUB-P.T
	⚠ 614 043 7294	POWER TRANSFORMER, SUB
	⚠ 614 012 8857	RELAY, POWER, 12V
or	⚠ 614 211 7606	RELAY, POWER, 12V
	⚠ 614 123 0023	BRACKET FUSE, FOR F901
	⚠ 614 123 2089	TERMINAL, AC-IN
	614 017 6964	TERMINAL BOARD, WRAPPER PIN
	614 035 4928	SOCKET, 3P, STAN-BY SW.
	614 020 6562	SOCKET, 4P, PRE-AMP.
Q951	405 003 5708	TR 2SA1318-T
or	405 003 5807	TR 2SA1318-U
D914	⚠ 407 004 9105	DIODE DSF10C
D915	⚠ 407 004 9105	DIODE DSF10C

PARTS LIST

Ref. No.	Part No.	Description
D916	⚠ 407 004 9105	DIODE DSF10C
D917	⚠ 407 004 9105	DIODE DSF10C
D922	⚠ 407 005 4505	DIODE DS442X
D923	⚠ 407 050 5502	ZENER DIODE GZA5.6Y
C900	⚠ 404 000 1607	CERAMIC 0.01U F 400V
or	⚠ 404 033 3302	CERAMIC 0.01U M -
or	⚠ 404 033 3401	CERAMIC 0.01U Z -
C907	⚠ 403 069 8404	CERAMIC 0.01U Z 50V

SPEAKER SWITCH & PHONES SOCKET PCB ASSY

Ref. No.	Part No.	Description
82	614 208 2898	ASSY, PCB, SPEAKER SW. (W.GERMANY)
	614 210 2336	ASSY, PCB, SPEAKER SW. (EUROPE•SPAIN)
	614 200 0274	PUSH SWITCH, SPEAKER
	614 020 3899	SOCKET, PHONES
	614 020 1253	SOCKET, 6P, MAIN-AMP.• SP.-TERMINAL
R759	401 061 6800	OXIDE-MT 390 JA 1W
R859	401 061 6800	OXIDE-MT 390 JA 1W

P.T SECONDARY P.C.BOARD ASSY

Ref. No.	Part No.	Description
83	⚠ 614 208 2911	ASSY, PCB, P.T SECONDARY (W.GERMANY)
	⚠ 614 210 2343	ASSY, PCB, P.T SECONDARY (EUROPE•SPAIN)
	614 020 6548	SOCKET, 2P, MAIN-AMP.
	614 020 1246	SOCKET, 5P, MAIN-AMP.
D910	⚠ 407 004 9105	DIODE DSF10C
D911	⚠ 407 004 9105	DIODE DSF10C
D912	⚠ 407 004 9105	DIODE DSF10C
D913	⚠ 407 004 9105	DIODE DSF10C
C909	403 057 3800	POLYESTER 0.1U M 50V
R901	⚠ 402 039 3708	RESISTOR 0.33 J- 1W
R902	⚠ 402 039 3609	RESISTOR 0.47 J- 1/2W

SPEAKER TERMINAL P.C.BOARD ASSY

Ref. No.	Part No.	Description
84	614 208 2935	ASSY, PCB, SPEAKER TERMINAL (W.GERMANY)
	614 210 2350	ASSY, PCB, SPEAKER TERMINAL (EUROPE•SPAIN)
	614 017 8135	TERMINAL BOARD, 4P, SPEAKER (W.GERMANY)
	614 017 8104	TERMINAL BOARD, 4P, SPEAKER (EUROPE•SPAIN)
	614 020 1222	SOCKET, 3P, SPEAKER SW.
C21	403 062 5103	POLYESTER 5600P K 50V (W.GERMANY)
C22	403 062 5103	POLYESTER 5600P K 50V (W.GERMANY)

STAND-BY SWITCH P.C.BOARD ASSY

Ref. No.	Part No.	Description
85	614 210 2367	ASSY, PCB, STAND-BY SW.
	614 019 0656	PUSH SWITCH, STAND-BY
	614 035 4928	SOCKET, 3P, SUB-P.T
D924	407 005 4505	DIODE DS442X

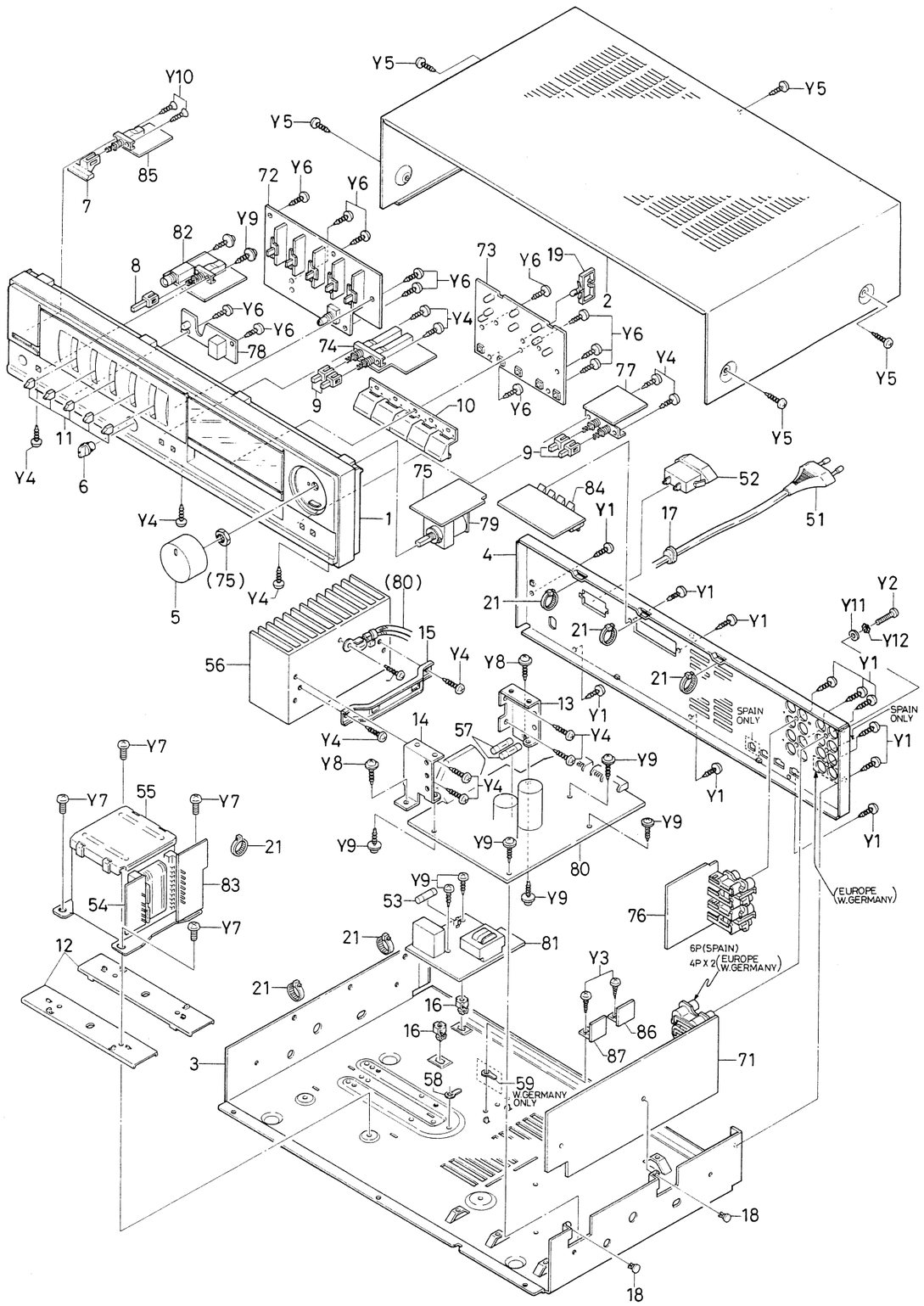
REGULATOR 1 P.C.BOARD ASSY

Ref. No.	Part No.	Description
86	⚠ 614 210 2381	ASSY, PCB, REGULATOR 1, DECK
	614 020 6555	SOCKET, 3P, MAIN-AMP.
IC901	⚠ 409 078 2402	IC L7812ML
or	⚠ 409 122 6202	IC NJM7812FA
or	⚠ 409 168 2107	IC UPC7812HF
or	⚠ 409 001 7603	IC AN7812F

REGULATOR 2 P.C.BOARD ASSY

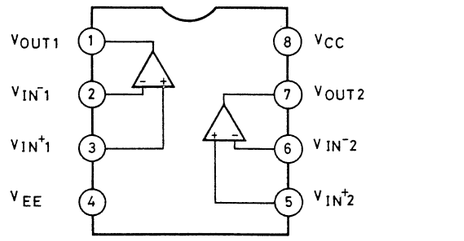
Ref. No.	Part No.	Description
87	⚠ 614 208 3079	ASSY, PCB, REGULATOR 2, TUNER (W.GERMANY)
	⚠ 614 210 2398	ASSY, PCB, REGULATOR 2, TUNER (EUROPE•SPAIN)
	614 020 6555	SOCKET, 3P, MAIN-AMP.
IC902	⚠ 409 078 2402	IC L7812ML
or	⚠ 409 122 6202	IC NJM7812FA
or	⚠ 409 168 2107	IC UPC7812HF
or	⚠ 409 001 7603	IC AN7812F

EXPLDOED VIEW

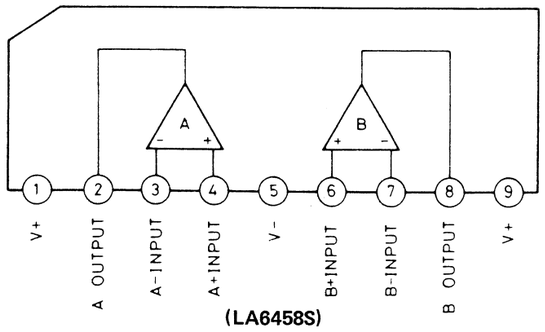


IC BLOCK DIAGRAM

IC500 LA6458DS (Dual Operational Amplifier)
IC550 LA6458S

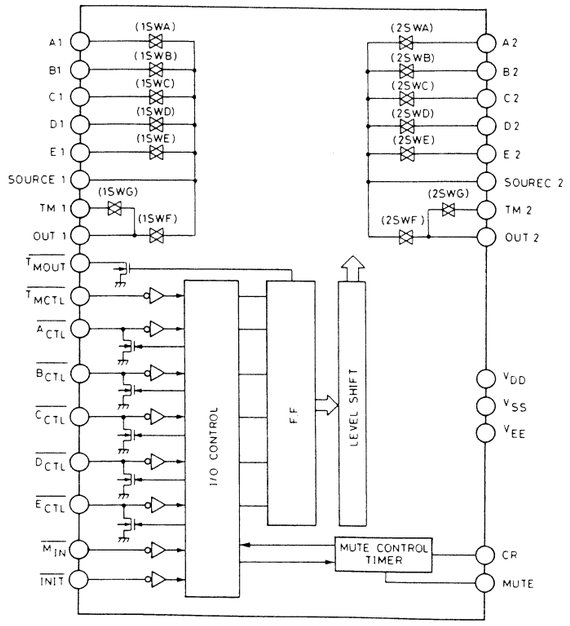


(LA6458DS)

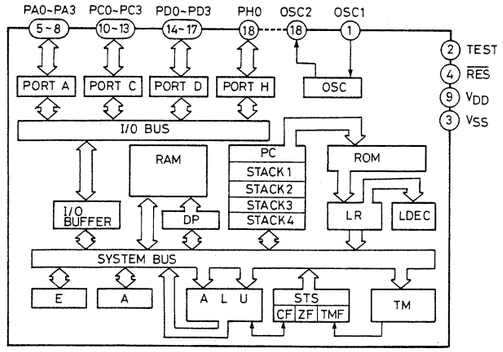


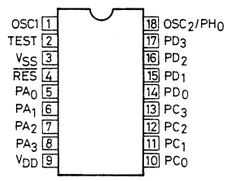
(LA6458S)

IC501 LA7818 (2-Pole 5-Position Analog Function Switch)

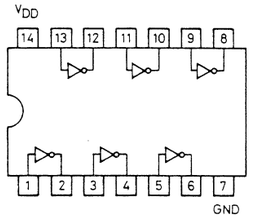


IC450 LC6527C (4-bit 1-Chip Micro Processor)



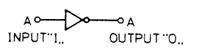


IC460 LC4069UB (Hex Inverter)

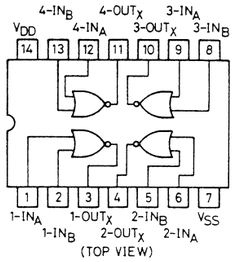


TRUTH VALUE TABLE

INPUT	OUTPUT
"1"	"0"
L	H
H	L

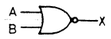


IC461 LC4011B (Quad 2-Input Positive NOR Gate)



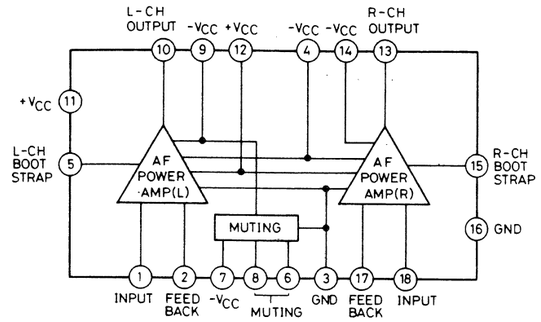
TRUTH VALUE TABLE

INPUT		OUTPUT
A	B	X
L	L	H
L	H	L
H	L	L
H	H	L

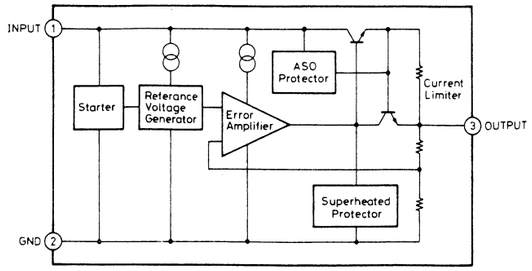


IC BLOCK DIAGRAMS

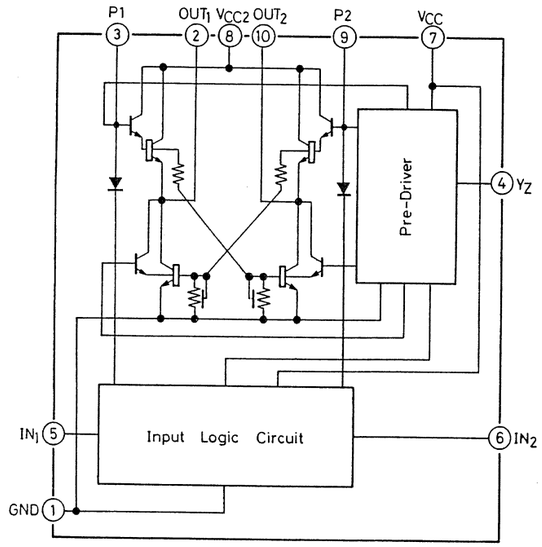
IC900 STK4192 II (2-Channel AF Power Amplifier)



IC901 L7812ML
IC902 (12V 3-Terminal Constant Voltage Requlated Power Suuply)

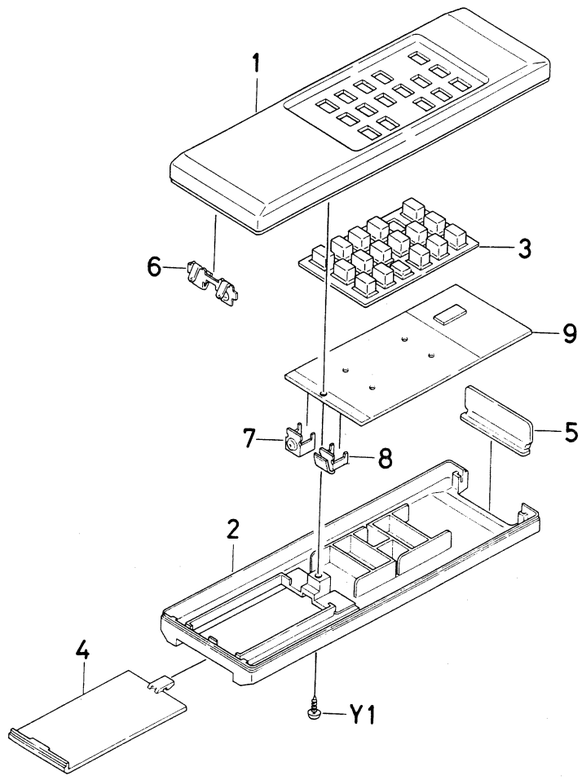


IC 420 LB1641 (Motor Driver)



Input		Output		Action
IN_1	IN_2	OUT_1	OUT_2	
0	0	0	0	Brake
1	0	1	0	Normal(Reverse)Rotary
0	1	0	1	Reverse(Normal)Rotary
1	1	0	0	Brake

EXPLODED VIEW & PARTS LIST (REMOTE CONTROLLER)



CABINET & CHASSIS

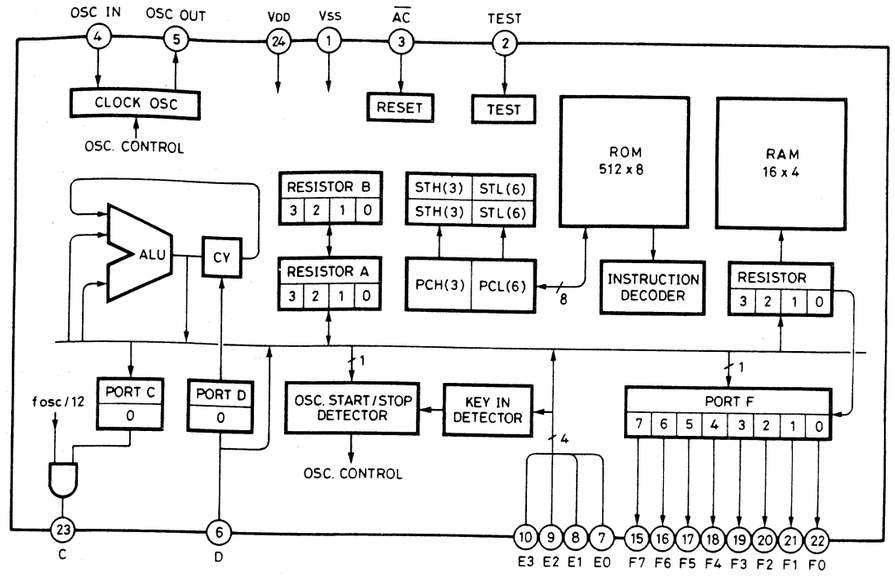
Ref. No.	Part No.	Description
	141-6-235T-08200	INNER POLYE LAMINA COVER
1	141-0-124T-57506	TOP LID ASSY
2	141-9-125T-06800	BOTTOM LID
3	141-9-160T-01005	PUSH BOTTON
4	141-9-128T-04500	BATTERY.LID
5	141-9-132T-00300	SIGN WINDOW
6	141-9-382T-00100	TERMINAL
7	141-9-382T-00200	TERMINAL
8	141-9-382T-00300	TERMINAL
9	141-9-280T-01373	P.C BOARD ASSY
Y1	411 104 7008	SCR S-TPG BIN 2X5

P.C.BOARD ASSY

Ref. No.	Part No.	Description
X1	9-266T-00300	SERAMIC RESONATOR CSB455E, 455KHZ
IC01	409 121 0201	IC M50560-110FP
Q01	406 004 6206	TR 2SC2001
LED01	408 005 2102	LED SE313
C01	404 032 6106	CAPACITOR 100P K 50V
C02	404 032 6106	CAPACITOR 100P K 50V
C03	404 032 6205	ELECT 47U M 10V
C04	404 034 8306	CAPACITOR 0.01U Z 50V
R01	402 035 8806	RESISTOR 200K J- 1/5W
R02	402 035 8707	RESISTOR 1K J- 1/5W
R03	402 035 3405	RESISTOR 2 J- 1/5W

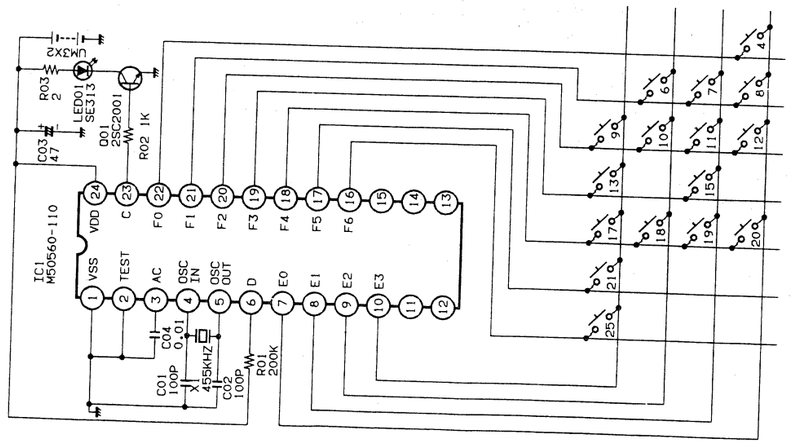
IC BLOCK DIAGRAM (REMOTE CONTROLLER)

IC1 M50560

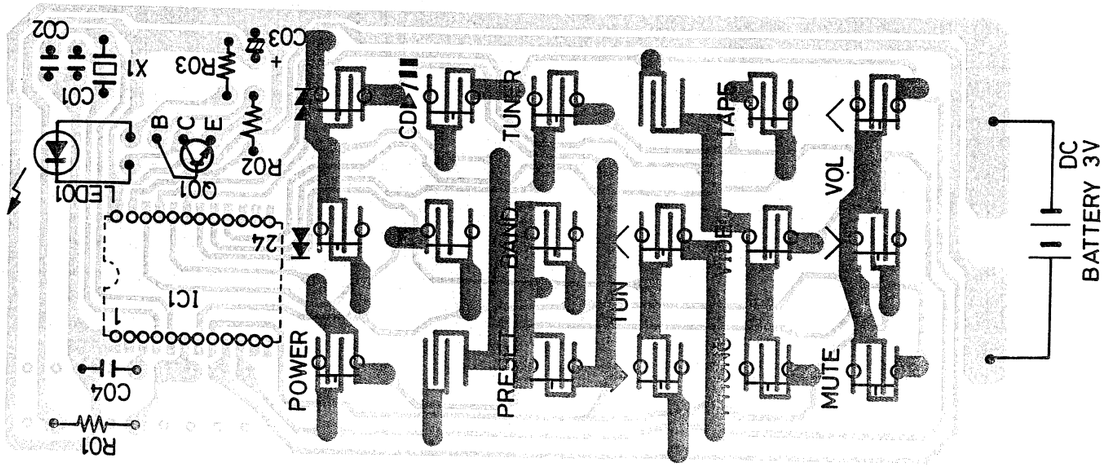


SCHEMATIC DIAGRAM (REMOTE CONTROLLER)

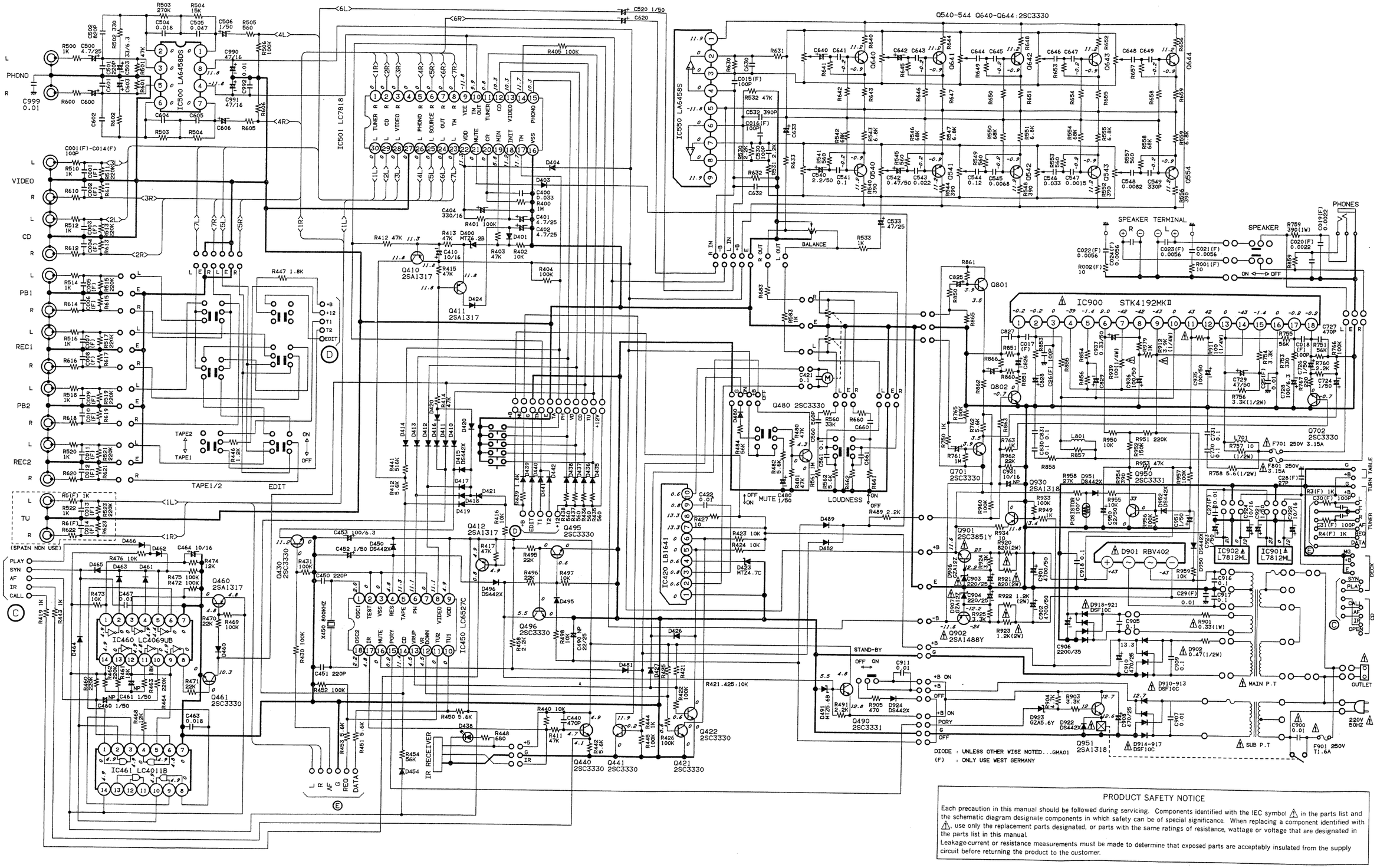
SW NO	FUNCTION
4	□
6	CD ▷/II
7	⊳⊳
8	⊲⊲
9	POWER
10	VOL_∧
11	VOL_∨
12	MUTE
13	VIDEO
15	PHONO
17	TUN∧
18	TUN∨
19	PRESET
20	BAND
21	TUNER
25	TAPE



WIRING DIAGRAM (REMOTE CONTROLLER)

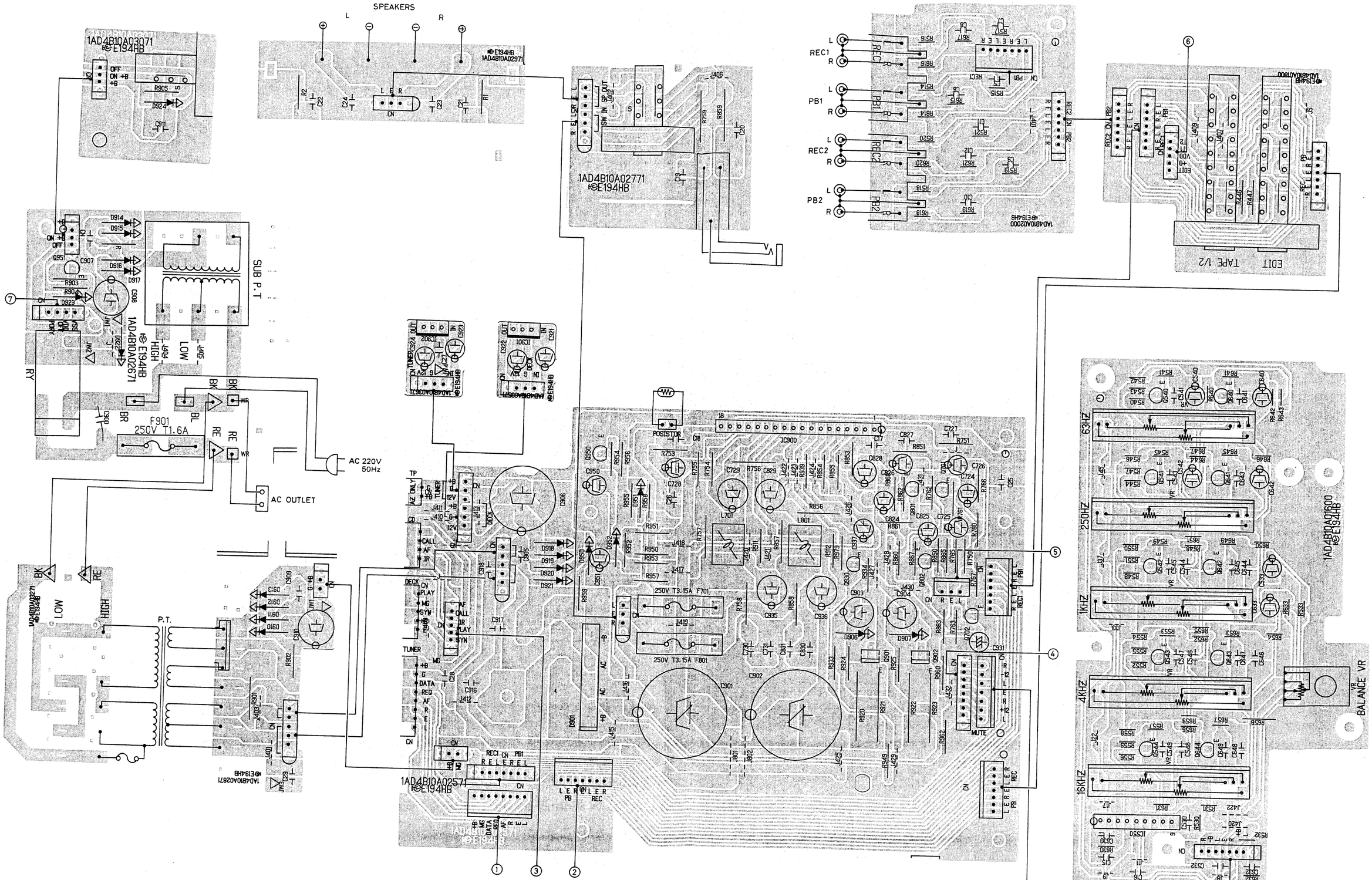


SCHEMATIC DIAGRAM



PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.


SPEAKERS
L
R
1AD4B10A03071
E194HB
OFF
ON +B
+B
R905
D924
E194HB
1AD4B10A02971
R2
C22
C24
C23
C21
R1
1AD4B10A02771
E194HB
J406
R559
R558
C19
C20
REC1
PB1
REC2
PB2
L
R
1AD4B10A02000
E194HB
EDIT TAPE 1/2
SUB P.T
D914
D915
D916
D917
D923
R903
R904
C907
C908
Q951
1AD4B10A02671
E194HB
HIGH
LOW
RY
F901
250V T1.6A
AC 220V
50Hz
AC OUTLET
P.T.
1AD4B10A02871
E194HB
TUNER324
IC902
IC901
1AD4B10A03621
E194HB
POSISTOR
IC900
TP
AZ ONLY
TUNER
DECK
CD
CALL
AF
IR
PLAY
SYN
MG
DATA
REQ
F701
250V T3.15A
F801
250V T3.15A
1AD4B10A02571
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REC
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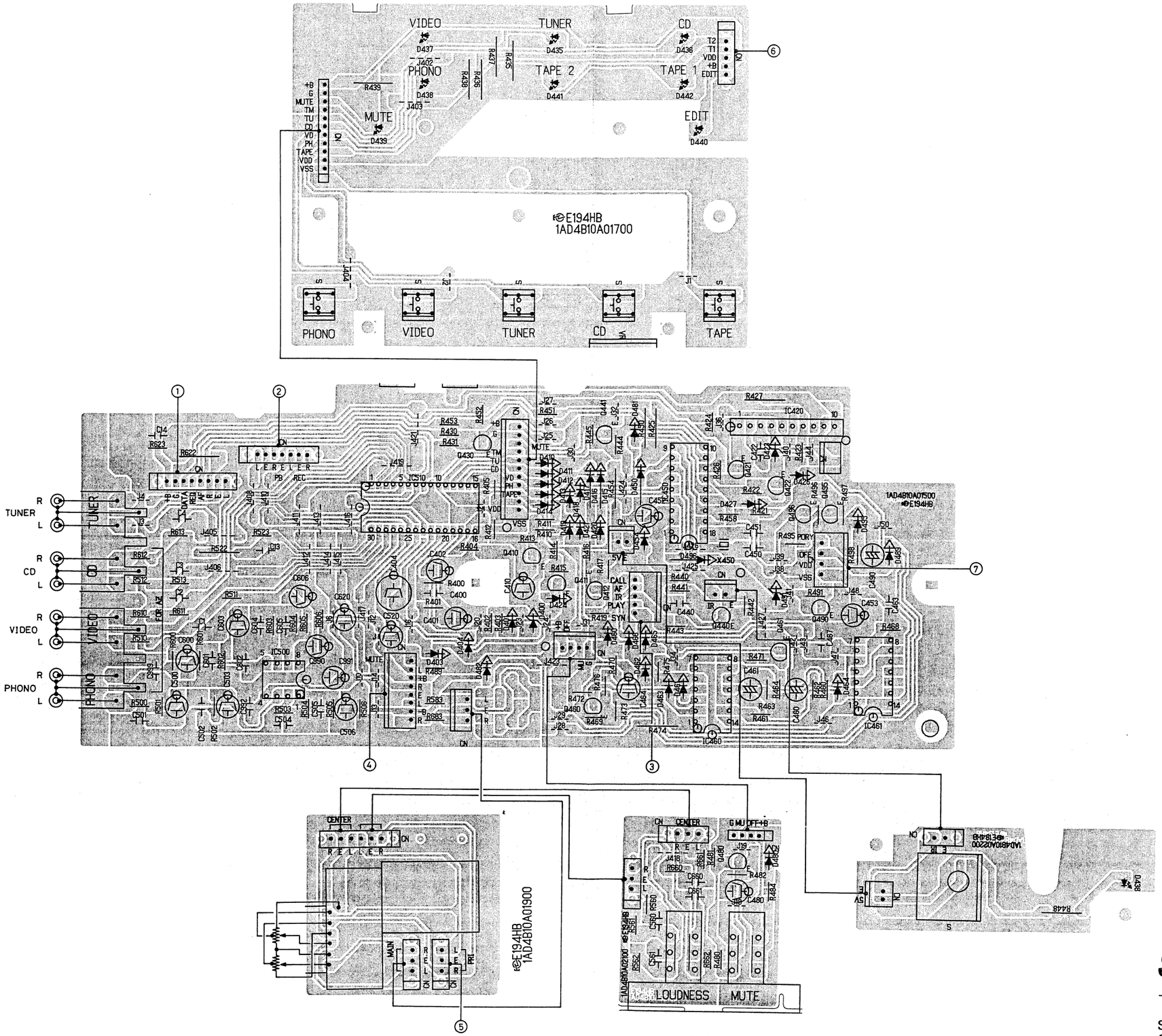
63HZ
250HZ
1KHZ
4KHZ
16KHZ
VR
BALANCE VR



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